



SEMINAR

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Selective laser melting of tungsten and tungsten-based materials

Aljaž Iveković

ABSTRACT

Selective laser melting (SLM) is an additive manufacturing technique enabling fabrication of three dimensional objects by selectively melting successive layers of metallic powders. By utilizing a high energy density laser, complex geometries of even refractory metals like tungsten can be realized. However, due to its intrinsic properties (high melting point, good thermal conductivity, high ductile-to-brittle transition temperature and high surface tension) SLM of tungsten remains a challenging task, mainly resulting in cracked and/or porous parts. Alternatively, the addition of a low melting point binder phase, as in the case of tungsten heavy alloys (WHAs), can facilitate the densification and potentially lead to high density crack-free parts.

Kindly invited.